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INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY USSR (Latvian SSR)

REPORT

SUBJECT 1. Riga Diesel Engine Plant
2. Riga Electric Machine Building Plant (REZ)

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1. Attachment A is a 21-page report (including six pages of sketches) of the Riga Diesel Engine Plant in 1955-1956. The factory made two- and four- cylinder engines. estimated the monthly plant production in 1956 to be 100 engines of each type. Some of the engines were for military use.

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2. Attachment B is a 30-page report (including seven pages of sketches) of the Riga Electric Machine Building Plant (REZ) from 1949 to 1959. This factory made electric motors and appliances. The plant's monthly production in 1952 was 24 DK-103 electric motors for locomotives, 70 DTI-63 electric motors for streetcars, 150 RD-2 generators for illumination of steam trains, an unknown number of electrical elements and condensers their number should be equal to that of the motors and generators), about 30 or 40 gasoline engine-driven generators, about 30 or 40 generators similar in size to the gasoline generators, about 120 electric washing machines, and about 100 motors like those used on washing machines but operating at 127 volts. After 1952, production had increased because of more highly specialized personnel and an increase in their number, new machinery, the introduction of new norms, improved work processes, and the inauguration of the foundry in 1955. estimated that the 1957 production had doubled on tripled over the 1952 production. the plant could be converted to war production in a very few days

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FIELD INFORMATION REPORT

COUNTRY: USSR (Latviyskaya SSR)

REPORT

SUBJECT: The Riga Diesel Engine Plant

PLACE ACQUIRED:

DATE OF REPORT:

THE RIGA DIESEL ENGINE PLANT

General

1. The Riga Diesel Engine Plant, which went into production in 1953, was subordinate to the Ministry of Heavy Industry USSR as of 1956. the plant had had no other name Before World War II, the same site was occupied by another industrial plant not further described which was destroyed during the war. The Diesel Engine Plant was located on Ganivu Dambis street, Stalinskiy rayon, opposite the REZ plant (Rizhkiy Elektromashinostroitelny Zavod) which produced electric motors. (See overlay of Riga on page 16 for exact location of the plant.) The plant had a two-meter-high brick wall on the north, east, and northeast sides which ran along the Krasnaya Dvina Canal. On the other sides, the plant had a wooden fence about two and one-half meters high;

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both the wall and the fence were topped by barbed wire. The plant perimeter was about 1,400 meters. There were no underground installations. Most of the plant buildings, especially the most important ones, were finished in 1953. In 1956, a new building (point No. 26 on the sketch on page 17), was under construction, and there were plans to construct new buildings on the esplanade in the southern part of the area, as shown in the same sketch.

Production

2. The plant produced only two types of diesel engines

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a. Four-cylinder engine:
diameter of cylinder - an estimated 100 millimeters
size of engine block - about 600 x 250 x 400 millimeters
weight, length of piston stroke, and other details - unknown

b. Two-cylinder engine:
diameter of cylinder - about 125 millimeters
size of engine block - about 300 x 250 x 400 millimeters
other data - unknown

These engines were checked by a military engineer with the rank of major, in uniform with black pogoni, possibly an artillery officer, who chose more than half of the engines which operated perfectly during testing, thus indicating that these engines were destined for military use

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The stripped engines were shipped disassembled and fastened to wooden platforms, and did not have starters, batteries, manometers, ammeters, nor other gauges of any kind.

these were installed at another location, perhaps by the consignee. The engines were shipped without water or oil pumps because these pumps were temporarily attached during testing and removed when testing was completed.

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3.

in 1956 the monthly plant production was about 100 each of the two-cylinder and the four-cylinder engines. The work plan was fulfilled but it was ~~neither unfulfilled~~ not exceeded. Certain raw materials were not received punctually, resulting in difficulties in the fulfillment of work norms. At the beginning of the month, the final units of the production chain, such as assembly, had little work to do, and at the end of the month, they had to do a normal day's work plus the backlog in order to fulfill the plan. In 1956,

production figures were commonly falsified in order to hide shortages;

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At that time it was rumored that the plant was to be enlarged and its production increased. [redacted] this plant could be converted to war production in a very few days. Production was increased by replacing old machinery with new, by introducing new work methods, and mainly, by a yearly decrease in the value of each worker's production /piece-work pay/ forcing the laborers to produce more to keep their wages from decreasing.

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4. Following is the legend to [redacted] sketch of the plant's layout on page 17, describing each building and its activities.

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(1) Steel and concrete bridge with three arches, spanning the Krasnaya Dvina Canal, and crossed by Ganivu Dambis street with its two lanes, streetcar tracks, and two sidewalks.

(2) Krasnaya Dvina Canal, which because of its shallowness, was navigable only by small tugboats.

(3) REZ plant area.

(4) Ganivu Dambis street, cobblestoned and about 20 meters wide. One of the sidewalks was composed of large concrete blocks; the other was asphalted.

(5) Collective housing unit for single women and widows employed by this plant; an old, two-story log building in good condition, measuring about 20 x 15 meters.

(6) Small, one-story wooden shed used for storing cans of gasoline for plant vehicles.

(7) Two-story brick building with concrete columns supporting the wooden framework of a gable roof, constructed in 1953; ~~and~~ the building measured about 50 x 20 meters. The ground floor contained the plant garage, used by the four three-ton plant trucks and the plant director's car and sometimes used for the storage of plant products. The second floor was a storehouse for tools not made at the plant and for injector pumps and some other diesel engine parts received from other unidentified plants.

(8) Old, two-story brick building that was in good condition and measured about 25 x 10 meters. The ground floor contained a laboratory that checked the accuracy of precision measuring instruments. The second floor contained the plant carpentry shop, in which wooden boxes for PLANT products were made in addition to other unidentified objects. The carpentry shop had no machinery.

(9) A small log dock about 25 meters long, which was not used.

(10) Wooden gate to dock described as point No. 9 above; used to permit fire trucks access to the canal water in case of fire. 50X1-HUM

(11) Foundry, occupying a new, one-story building with reinforced columns or pillars supporting the roof framework; it was inaugurated in 1953. It had cement-colored brick walls, and a saddleback roof with adjustable windows on the sides of each tooth. It measured about 70 x 40 meters, and, along the north wall, outside the building, it had a metal stack for smoke and gas from the blast furnaces. Air outlets for exhaust fans expelling gases formed in the foundry were also located along the north wall. This shop produced cast parts for diesel engines made at the plant (blocks, pistons, flywheels, pulleys, crankcases, cylinder heads, and other items of this kind needed in the production of engines). Cast pieces were transported in handcarts or battery-driven electric carts to the foundry auxiliary shop described as Point No. 19, below. The foundry also cast aluminum parts. The foundry contained four furnaces for the smelting of cast iron and steel which burned coal and coke, a small furnace for the smelting of aluminum, and a two or three-ton bridge crane. The foundry contained no other machinery, because the filling of molds, and other auxiliary operations, were done by hand. The foundry employed about 120 persons on three shifts. the foundry, supplied the entire plant. 50X1-HUM 50X1-HUM

(12) The metal stack of the foundry was about 15 meters high from ground level, and had an outside diameter of about 80 centimeters.

(13) Shop producing crankshafts, cam shafts, flywheels, and other unidentified forged parts, for the engines produced at the plant. It occupied an old, one-story building which had existed in the era of the former plant with steel columns which, with the brick walls, supported the steel framework of a sheet-metal gable roof. This building was in good condition; measured about 30 x 20 meters, and had no basement. This shop contained two coal-burning furnaces, two forges with blowers, three hydraulic hammers, and handtools. Parts made at this shop were transported in handcarts to the machine shop located on the ground floor of point No. 28, where they were finished. This shop employed about ten persons who worked only one shift. production was sufficient to supply the entire plant. 50X1-HUM

(14) Plant vehicular entrance.

(15) Plant personnel entrance, where two guards were posted.

(16) Old, two-story wooden building that must have belonged to the old plant; it measured about 40 x 15 meters. The ground floor contained the section which issued temporary passes for entrance to the plant and issued propuski to new employees, and the plant infirmary, with a health officer and nurse on duty. The second floor contained living quarters for the plant guards and firemen.

(17) Old, wooden building that had formed part of the old plant; at one end, it abutted the building described in point No. 16, forming a right angle. The building measured about 25 x 15 meters. One-half of the building had two stories; the eastern half, which had only one story, was the raw materials storehouse. The ground floor of the western half of the building contained the offices of the plant Party organization, and had a small hall for the meetings of Party secretaries from the different plant sections or shops. The second story of the western half of the building contained the offices of the plant trade unions, and the office of the engineer and subordinate personnel in charge of the construction and repair of plant installations who were subordinate to a Riga construction trust rather than to this plant. The raw materials storehouse measured about 15 meters square, and was used for the storage of relatively inexpensive raw materials that might be damaged by storage in the open air such as copper and bronze tubing; aluminum ingots; nickel sheets; copper, bronze, tin, lead, and zinc plates; and, in general, all similar raw materials; and screws and bolts of different sizes and uses. Point No. 21, surrounded by a dotted line, belonged to this storehouse and provided open-air storage for iron and steel ingots for the foundry and forge shops, bars, steels with angular cross sections, and other raw materials. This supplied the entire plant; source could not calculate the volume of these raw materials, but, in general, they constituted a one-month's supply. The storehouse had a half-ton crane and two small electric saws for cutting tubing and bars to exact specifications, and employed about 30 persons on two shifts, including laborers who distributed the raw materials in handcarts or electric carts to the plant sections.

(18) Tool and die shop, located in a new building with several rows of reinforced concrete columns which, with the cement-colored brick walls, supported the steel framework of the roof. This shop measured about 40 x 30 meters, had no basement, and had

only one story except for a narrow section along the west side that had a mezzanine-type construction. The tool and die shop, with its grinding section, occupied the entire ground floor. The mezzanine housed a small fitters' department that formed part of the tool and die shop. The latter produced dies and clamps for products being mass-produced on the various pieces of plant machinery. The shop tempered its own products and those of different sections of the plant, and, in general, repaired and ground all plant tools. Because this work did not permit the shop to operate at capacity, it also produced some unidentified parts for the machine shop described in point No. 28. The tool and die shop had the following machinery: turret lathes, universal lathes, planing machines, vertical and horizontal boring machines, universal grinders, drill presses of different sizes, surface grinders, radial and cylinder grinders, electrical presses for die testing, two small electric tempering furnaces (springs, dies, etc), bridge cranes, and hand tools. Most of this machinery was of Soviet make but there was some of German make and both types were well made and in good condition.

The tool and die shop employed about 200 persons on two shifts. Tools and dies produced in this shop were stored in the small shop storehouse from which they were distributed via handcarts or electric carts to the storehouses of the different plant sections. Items other than tools which this shop produced were transported to the machine shop located at point No. 28. After tempering, parts that had been accepted for tempering were returned to the appropriate sections.

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(19) Foundry auxiliary shop, housed on the ground floor of an old brick building that had a sheet-iron roof and measured about 10 x 6 meters. The second story of this building contained the office of the plant safety engineer. At the foundry auxiliary shop, burrs and scabs were removed from all cast parts received from the foundry (point No. 11). This work was done with compressed air, sandblasting, and air hammers; two milling machines and two manual grinding machines were used to finish the work. When this processing was completed, the cast parts were transported by handcarts and electric carts to the machine shop, point No. 28. The foundry auxiliary shop employed about ten persons on one shift.

(20) Boiler plant, supplying heat, steam, and hot water to the entire plant. It was installed in a new building, inaugurated in 1953, which had two or three rows of reinforced concrete pillars or columns that, together with the cement-colored brick walls, supported the steel framework of the roof which was a sheet metal monitor type with retractable windows. A metal chimney with an outside diameter of about 80 centimeters projected about ten meters above the roof's level. The building measured about 30 x 15 meters and had one story although it was at least eight meters high. The boiler plant had three boilers that burned wood, peat, and coal; it had no machinery except for a 1,500-kilogram capacity crane, several fans, and one or two boiler feed pumps. It employed about 30 workers on three shifts, about ten of whom were plumbers and were in charge of all plant plumbing.

(21) Open-air raw materials storage, mentioned in No. 17.

(22) Concrete roads with an approximate 30-centimeter layer of concrete,not asphalt topped; they were about eight meters wide, had gardens with trees on both sides, and sidewalks made of blocks of concrete bordering the buildings.

(23) Small, new, one-story brick building inaugurated in 1953; it measured about 12 x 15 meters, and contained an electrical installation [redacted]: circuit breakers for each section of the plant, and three apparatuses like electric motors, which [redacted] were probably alternators (sic) that changed alternating current to direct current used in electroplating and electric welding; [redacted]. 50X1-HUM 50X1-HUM 50X1-HUM

(24) Pumping station that pumped sewage into the river; it occupied a round building with an exterior diameter of about six meters, built in 1954. It projected above the ground about two meters and was built underground to a depth of about four meters. [redacted] The building was constructed of concrete up to ground level; above ground level, it was built of red brick. Personnel worked three shifts. 50X1-HUM

(25) Dining room and kitchens, occupying the second floor of a new, two-story cement-covered brick building that measured about 30 meters square and was inaugurated in 1955. The ground floor contained auxiliary installations such as the sinks, cold storage rooms, food products storehouse, and the offices of the dining room manager.

(26) Grey brick building measuring about 70 x 30 meters, whose construction was interrupted at the second floor level, awaiting investigation of the death of a laborer during its construction. [redacted] when finished, the building would have four or five stories, and [redacted] it would be used as the administration building for plant technical, administrative, and political matters. The size of this building, which was to house the administrative offices exclusively, gives a partial idea of the plans for enlargement of the plant. 50X1-HUM

(27) Shed without walls; it measured about seven meters square and was used for the storage of materials used in the construction or repair of plant buildings. A small concrete mixer was kept in the shed. The steel framework used in the construction of reinforced-concrete columns, bearing walls, etc. were assembled in this shed, which was not subordinate to the plant but to the construction trust in Riga, which was in charge of building construction within this plant.

(28) New U-shaped building, inaugurated in 1953, that had several rows of reinforced-concrete columns that supported the roof's steel framework; some of these columns were both free and engaged. The building measured about 100 meters long, about 50 meters wide at the center, and about 60 meters wide at each end. It was a one-story building with no basement, but a 20-strip on the western side had two mezzanines. The central part of the building had a saddleback roof with three teeth; both ends of the building had another roof of the same type running transversely. The ground floor contained the (a) machine shop, (b) the assembly, (c) testing, (d) painting section, and (e) packing sections. Of the three floors situated on the western side, the second contained the offices of all the sections in this building; the third floor contained the administrative offices of the plant. (See sketch on page 18 for layout.)

a. The machine shop finished all component parts for the engines produced at the plant: motor blocks, crankcases, cylinder heads, pistons, piston rings, crankshafts, camshafts; most of these parts were received in rough shape from the foundry or Shop No. 13. This shop worked in coordination with the boiler plate shop (point No. 30), the tool and die shop (point No. 18), and also by the machinery repair shop (point No. 30), especially at the end of each month. The machine shop had the following machinery: three large planers; from eight to ten medium-size planers; three large boring machines; two large

vertical boring machines; two large lathes; 12 universal lathes; five turret lathes; a total of seven surface grinders, cylinder grinders, and crankshaft grinders; two machines to control the vibration, hardness, and efficiency of the grinding stones for all machinery; a total of ten vertical and horizontal milling machines; four large drill presses; two multiple-spindle drill-presses (either four or six spindles); four hand drills; two hydraulic presses; three three-ton bridge cranes; three one-half-ton cranes. In 1956, except for one planer, all this machinery was of Soviet make. When the plant was inaugurated in 1953, about 50 percent of this machinery was German, but has been replaced by more modern, new Soviet-made machinery. Parts produced by this shop were transported in handcars to this shop's storehouse, from where they were sent via handcarts to the assembly shop.

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It employed about 500 persons on three shifts.

b. The assembly section worked on the assembly of the two types of motors produced at the plant. It received the parts from the machine shop storehouse; fuel injection pumps and other components not produced at the plant were received from the tools storehouse located on the second floor of point No. 7. The machinery in the assembly section included as assembly line which consisted of a turntable for each worker, a three-ton bridge crane, a one-half-ton crane, three drill presses, two oil baths for the heating and assembly of ball bearings, and several sets of hand tools. Assembled motors were transported in handcarts to the testing section. The assembly section normally employed about 50 workers on two shifts; at the end of each month, the number of workers was increased to 70 on three shifts.

c. The testing section tested the newly assembled engines, noting defects; slight defects were corrected in the testing section itself; more important defects required that the engines be returned to the assembly section for their correction. This section had test benches that could test ten engines at a time, and a three-ton bridge crane. Each engine was tested for horsepower, temperature, compression, fuel consumption, RPM, and other characteristics. This section employed about 20 persons on two shifts; at the end of each month, the section worked three shifts with the same personnel. The section chief was also chief of the assembly and the painting sections.

d. In the painting section sprayers were used to paint khaki color all engines produced at the plant; motor parts that were to be left unpainted were covered with a layer of grease. The painting section had a three-ton bridge crane, three paint sprayers, four drying fans, and one exhaust fan to expel paint fumes from the shop. Painted engines were transported by the bridge crane to the packing section, where they were picked up by another crane. The painting section employed about eight persons on one shift.

e. In the packing section, the engines were screwed down on wooden platforms and packed in wooden boxes. Unidentified parts of the engine were disassembled and packed with wooden supports so they could not move. A set of wrenches, indispensable for the reassembly of the engine, were wrapped in canvas and placed next to the engine, within the wooden box. The plant had no storehouse; when the engines packed for shipment filled the storage space in the packing section, they were transported to the plant garage. Plant trucks or non-plant trucks picked up the engines at the garage. The packing section employed about 15 persons on one shift. 50X1-HUM 50X1-HUM

29. Plant transformer located in the open air and surrounded by a wooden fence; it was said that a small building was to be constructed to house the transformer.

30. New brick building that was inaugurated in 1953; it had several rows of reinforced-concrete columns that, together with the walls, supported the steel framework for the roof. The building measured about 60 x 50 meters, and was shaped as shown in source's memory sketch of the plant. The building had only one story, except for the north side, which had a ten-meter-wide section of two stories; the two-story section had a hipped roof; the one-story section had a gable roof. The ground floor contained the a. machinery repair shop, b. the boiler shop, c. the stamping shop, and d. the electroplating shop. (See sketch on page 19 for layout of ground floor.) The second floor contained the showers and shop offices for all the ground-floor shops.

a. The machinery repair shop carried out periodic inspections of all plant machinery and did the major repairs; less important repairs were done by the mechanics in each shop or section. A maintenance record was maintained on each piece of plant equipment. This shop had four large lathes, six medium-size universal lathes, two turret lathes, two planers, one vertical and one horizontal milling machine,

one three-ton bridge crane, one one-half-ton crane, two special milling machines for gear cutting, three drill presses, and one surface and one cylinder grinder, all of Soviet make, and all in good condition. This shop assisted the machine shop located on the ground floor at point No. 28 in the production of various parts. This shop employed about 80 persons on two shifts.

b. The boiler (sic) shop produced exhaust pipes, mufflers, air filters, oil filters, and a few other items that source did not remember. This shop employed about 150 persons on two shifts and had two hydraulic presses, three drill presses, two electric welding units, three autogenous welding units, one electric spot welder, one manual roller for sheet, one three-ton bridge crane, and several emery wheels. Items produced at this shop were transported via handcarts to the assembly shop, which was located on the ground floor at point No. 28.

c. The stamping shop produced several motor parts, including head gaskets, oil-filter and air-filter cases, washers, and in general all stamped parts needed for the engines, besides different kinds of springs and certain kinds of bolts. The stamping shop had seven stamping machines, five universal lathes, and one milling machine with a stone cutting tool; this machinery was of Soviet make (copied from foreign makes, as was all the machinery they had), was nearly new, and was in good condition. Stamped sheet metal products from the stamping shop were transported via handcarts to the boiler shop for welding, where they were finished. The bolts and springs were transported in handcarts to the tempering department of the tool and die shop, located at point No. 18. The stamping shop employed about 50 workers on three shifts.

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d. The electroplating shop treated bolts, sheet metal, and unidentified parts, all forming part of the engines produced at the plant. This shop had seven baths, two electric furnaces to dry electroplated parts, two exhaust fans, and one 1,500-kilogram crane. Electroplated parts were transported via handcarts to the assembly shop, located on the ground floor of point No. 28. this shop employed about 20 persons on two shifts.

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31. Plant clinic, occupying an old two-story wooden building that measured about 20 x 15 meters. In 1956, it still did not have x-ray equipment or other apparatus, but they were to be installed shortly; specialists would be assigned to this clinic one or two days weekly.

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32. Storage area surrounded by a badly made wooden fence about two meters high that appeared to be a temporary fence.

    a. a small one-story brick building measuring about 5 x 3 meters that was used for the storage of tar in wooden barrels.

    b. a new, one-story brick building with a concrete roof; it projected about two meters above ground and one meter below, and measured about 8 x 5 meters. In it were stored cans of grease, lubricating oils, and diesel fuel for use in motor testing.

    c. a wooden hut for empty fuel and lubricating oil cans.

    d. two tanks that were new in 1956. The tank bottoms were one meter below ground level, but each tank sat on three concrete supports so it did not touch the ground. These tanks were cylindrical, and were about eight meters long and 2.5 meters in diameter.

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33. Open air storage area for coal and wood for the foundry and boiler plant, Nos. 11 and 20, respectively. This area had no fences or guards.

34. Sparsely populated rectangular-shaped area, containing six wooden buildings, each of which was inhabited by several families.

35. Vegetable gardens.

5. Raw materials used were iron and steel, in bars and ingots; iron, brass, copper, and bronze tubing of different diameters; iron, bronze, and copper plate of from .5 to 8 millimeters in thickness; brass plate of from .1 to 8 millimeters in thickness; aluminum plate of from 2 to 8 millimeters in thickness; aluminum and duralumin ingots; asbestos sheeting for gaskets; ingots of antifriction metal; ball bearings of different kinds fuel injector pumps for the engines; rubber hosing; fan belts; generators; manometers, thermometers, ammeters, and other gauges for the engines; tin in bars, for soldering; different kinds of welding rods; coal, peat, and wood for the foundry, the boiler plant, and shop No. 13; paints and enamels in black, aluminum, and khaki colors; acids for welding; alcohol for cleaning certain engine parts; lubricating oils and greases; and diesel fuel for motor testing. the quantities of each raw material consumed were shipped to the plant in trucks, because the plant had no railroad spur.

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Utilities

6. The plant had no water towers [redacted] Water came from the city water system; [redacted] Interruptions in the supply of electricity were not common although they did occur in December, January, and February. [redacted] this was because freezing weather reduced the volume of water available for hydroelectric stations. The electric motors at the plant operated at 350 volts; the lighting system operated at 220 volts, and the lighting of each machine at 36 volts.

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Transport

7. The plant had no railroad spur. The highways serving the plant had been built in 1954; they were all-weather concrete highways without any asphalt topping; they measured about eight meters wide and their drainage system measured about 30 centimeters wide. In 1956, this plant had four three-ton trucks, which were used within the plant only to transport the iron ingots and coal to the foundry (other transport within the plant was supplied by handcarts and by two battery-powered carts). Outside the plant, these trucks were used to transport the engines to the railroad freight station, although outside trucks, [redacted] sometimes came to the plant to pick up completed engines. Transport of raw materials was done by the four plant trucks, which transported them from the above mentioned railroad freight station to the plant. [redacted] after January 1960, no industrial installation would have its own facilities for transport outside the installation, but [redacted] transport would be supplied by transport motor pools that were being organized in all cities. There was no water-borne transport; the dock located at point No. 9 on the sketch on page was not used. This dock had been built by the firm that formerly occupied the area.

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Storage

8. Raw materials were stored at points Nos. 17 and 21 on the sketch on page 17. [redacted] Plant products were stored in the packing section, point No. 26 of the sketch on page 17, and also in the plant garage, located on the ground floor of point No. 7 of this sketch. Nevertheless, storage of plant products might be said almost not to have existed because the engines were shipped as they were finished.

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Schedule and General Conditions

9. As of 1956, the plant worked an eight-hour day, including Saturdays; the plant did not work on Sundays or on Soviet holidays. The number of shops operating on two shifts was almost equal to those operating on three. Vacations were given by turns so that production would not be interrupted; vacations were the same as those given to all workers in the USSR: 12 working days for those workers with less than three years' seniority, 15 working days for workers with more than three years' seniority, 18 working days for workers doing heavy labor or work injurious to health, and one month for all administrative employees, engineers, foremen, section chiefs, and plant executives.

10. Salaries were not fixed but were proportionate to the work done in accordance with the norms. The average worker's salary was about 800 rubles monthly in 1956. By January 1960, several plants had adopted a fixed wage and [redacted] by April 1960, all plants in the USSR would be required to adopt the same system. To receive the stipulated wage, workers had to fulfill the norm 100 percent. This new system was aimed more at obtaining greater quality rather than quantity. 50X1-HUM

11. Health and general working conditions were fair. Each section or shop had a first-aid kit that was supposed to contain alcohol, gauze, iodine, and cotton, but which was usually empty. The plant had one infirmary which was inadequate for plant needs. It was planned to install a clinic after 1956, at point No. 28 on the sketch on page 17.

12. [redacted] the organization of plant personnel is outlined in the sketch on page 20. On page 21 is a sketch of the table of organization in the machinery repair shop, where source worked. [redacted] the total number of plant employees [redacted] about 2,500 or 3,000. About 70 percent of this number were laborers; the balance were administrative employees, inspectors, guards, firemen, foremen, and engineers. [redacted] no strikes although complaints, which were usually expressed privately, were frequent. In general, except for Party and Komsomol members and stakhanovites, no one received any special privileges. Absenteeism was not a problem although workers sometimes missed work because of drunkenness. Cases of absenteeism were usually reviewed by a board composed of plant employees, who decided on the punishment to be meted and which became progressively severe for repeaters who could be fired or tried in court and given a more severe penalty. 50X1-HUM 50X1-HUM 50X1-HUM

Security

13. The plant had about 15 guards who were plant personnel and were armed with pistols; they guarded the entrance gates and the plant interior but did not patrol the outside. There were no sentry boxes and no dogs. Employees had to show their propuski to enter or leave the plant. no restricted shops. 50X1-HUM
The five plant firemen had no fire-fighting equipment and worked principally inspecting the equipment in each shop such as hoses, extinguishers, axes, pikes, and sand. They also trained the workers in each shop who were in charge of fire-fighting.

no civil defense practices of any kind at the plant. 50X1-HUM

Automation

14. Automation was non-existent and no plans to automatize the plant. 50X1-HUM

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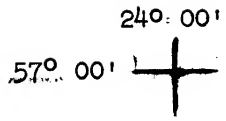

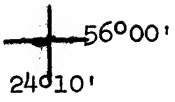

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Location of Riga Diesel Engine Plant

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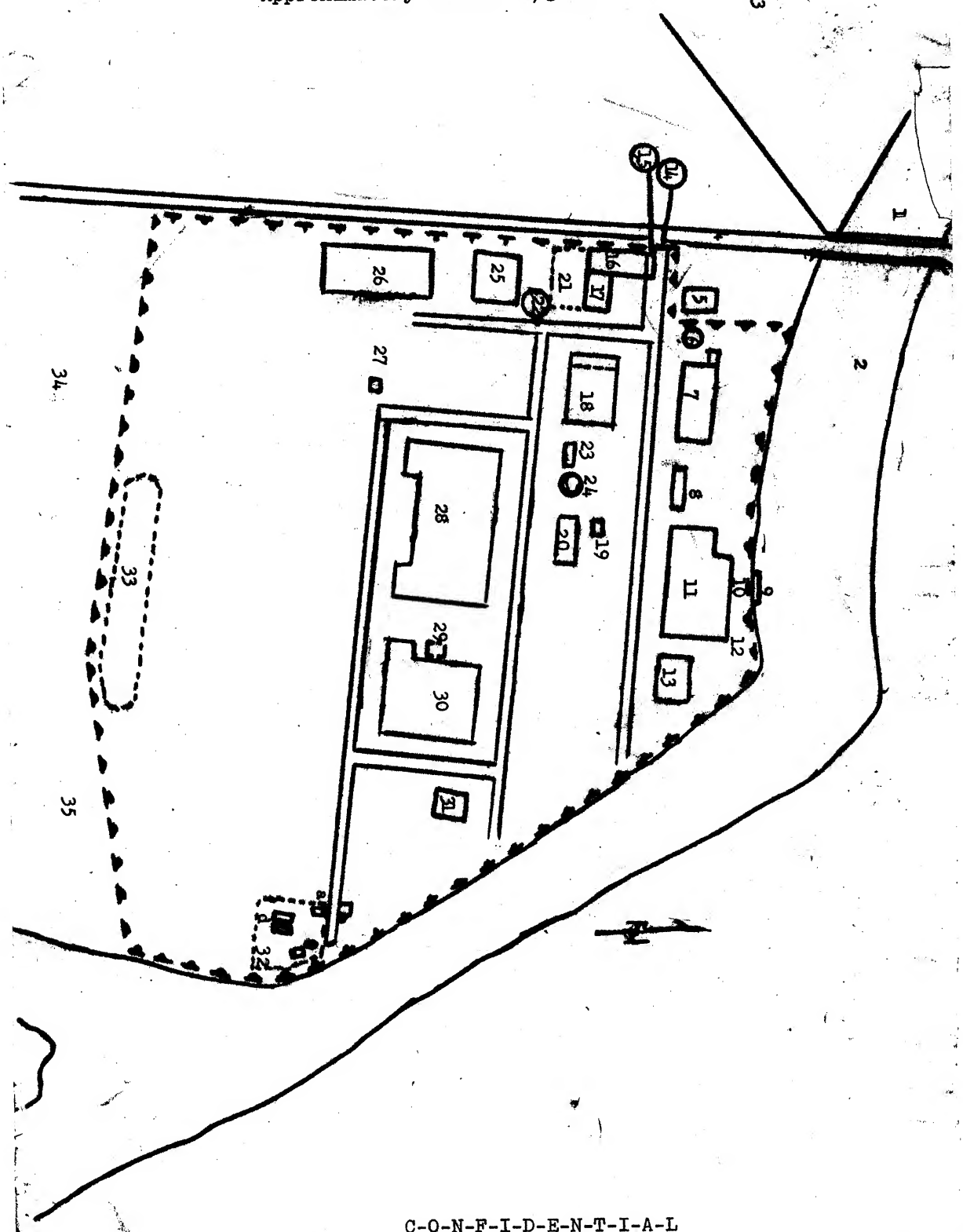
-17- ATTACHMENT TO

Sketch of the Riga Diesel Engine Plant
Approximately scale: 1/3000



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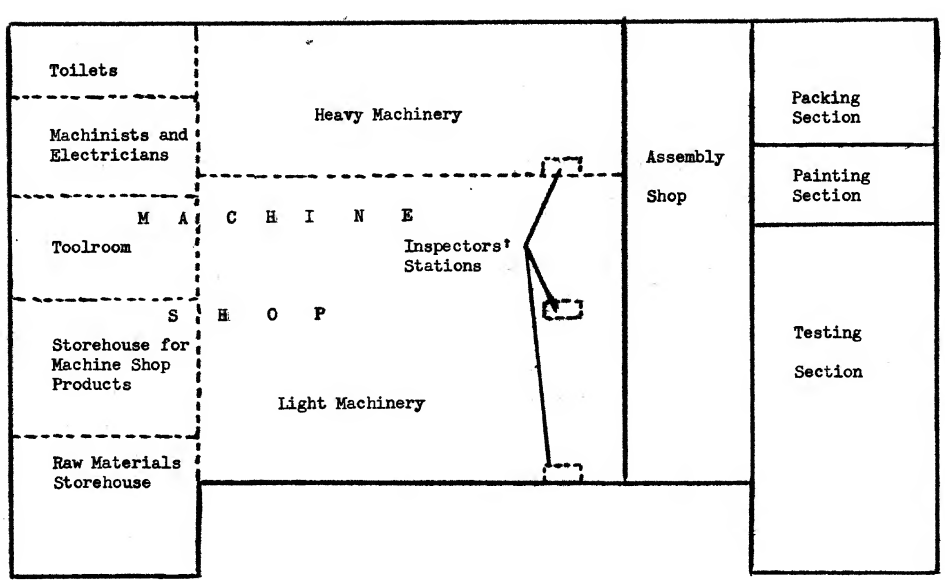
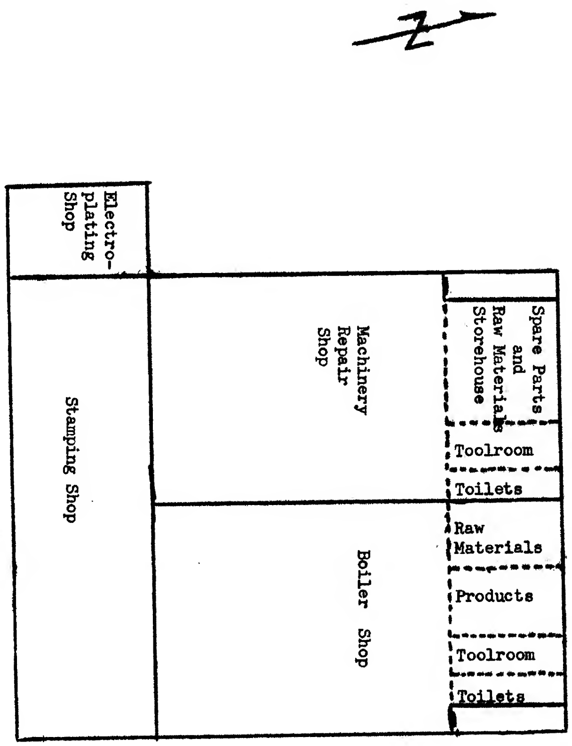
Sketch of Ground Floor of Building Described as Point No. 28 at the Riga Diesel Engine Plant
Approximate scale: 1/500



ATTACHMENT

Sketch of Ground Floor of Building Described
as Point No. 30 at the Riga Diesel Engine Plant
Approximately scale: 1/500



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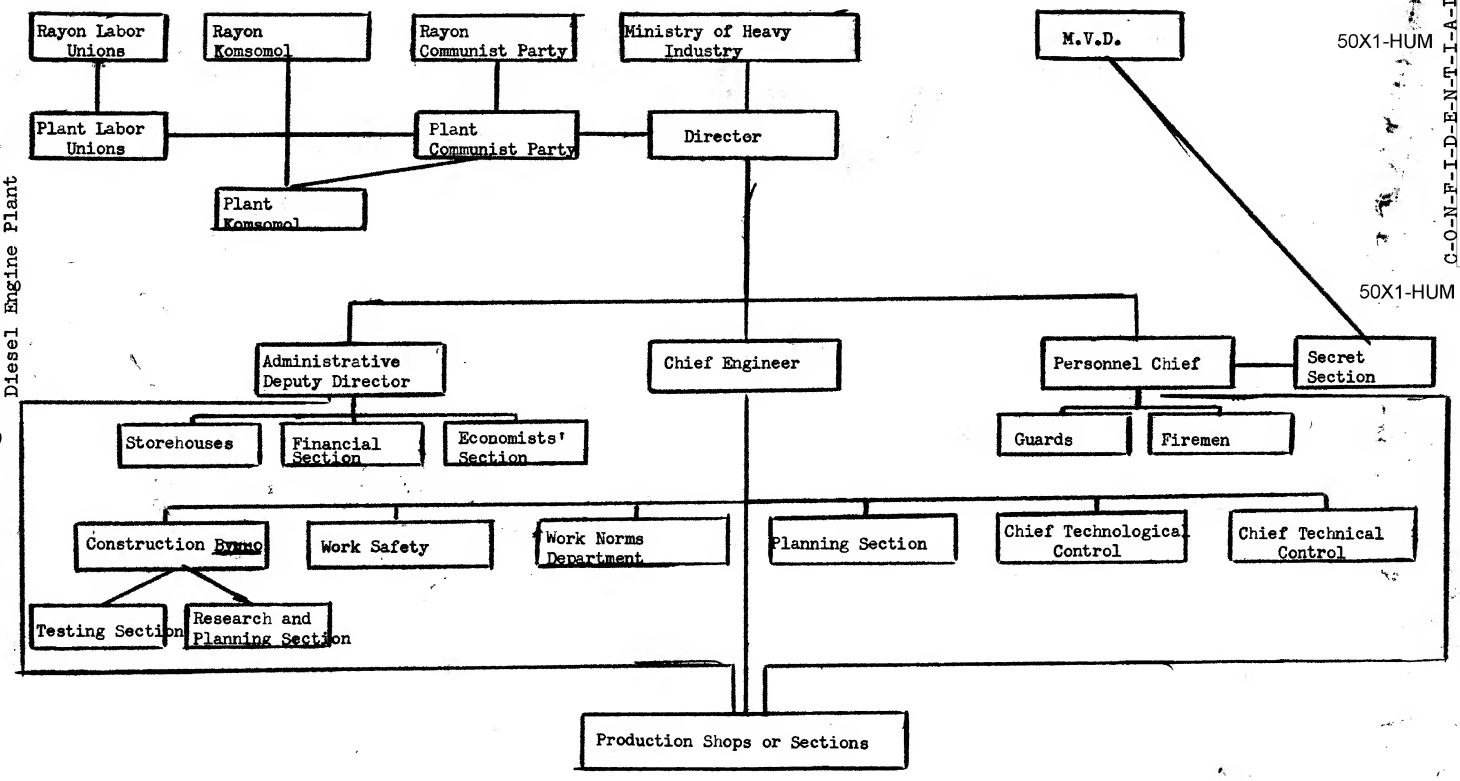
Personnel Organization Plan of the F... Diesel Engine Plant



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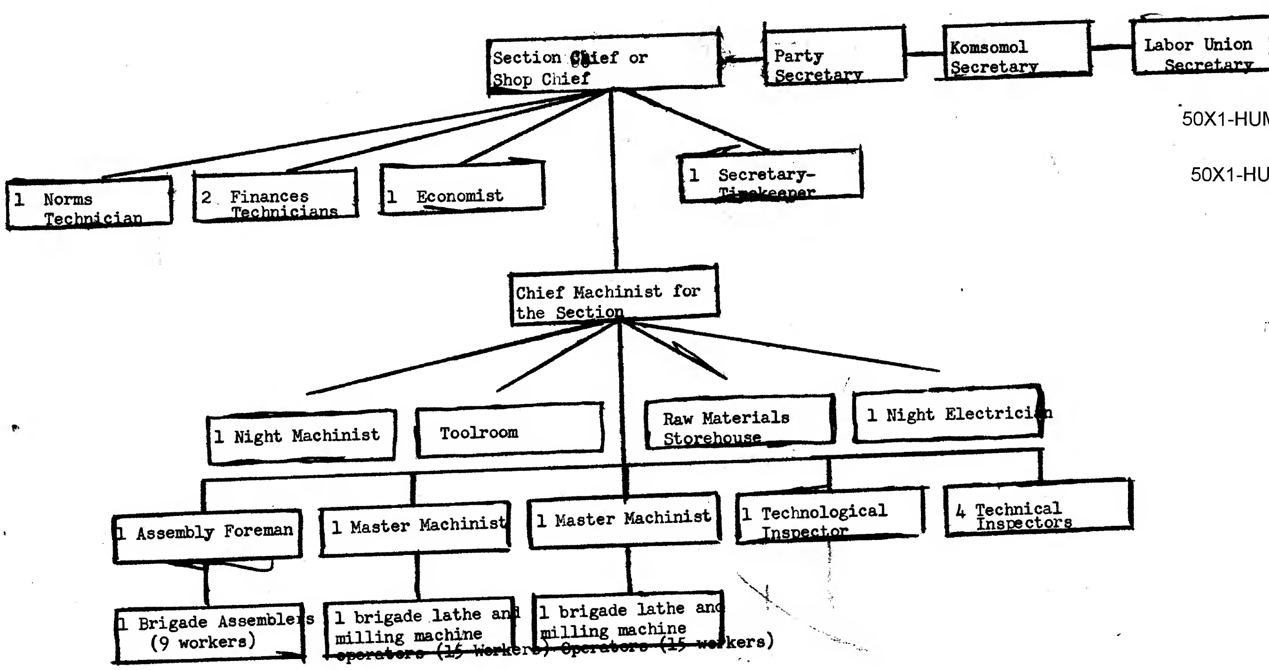
-21-

Personnel Organization Plan of the Machinery Repair Shop of the Riga Diesel Engine Plant



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FIELD INFORMATION REPORT

COUNTRY: USSR (Latvian SSR)

REPORT

50X1-HUM

SUBJECT: Riga Electric Machine Building Plant (REZ)

PLACE ACQUIRED:

DATE OF REPORT: 7 October 1960

RIGA ELECTRIC MACHINE BUILDING PLANT (REZ)

1. The Riga Electric Machine Building Plant (Rizhkiy Elektromashinostroitelny Zavod - REZ), located at No. 31 Ganivu Dambis Street, Stalinskiy rayon, in Riga, opposite the Diesel Engine Plant, was called Provadnik prior to the Soviet occupation. From 1905 until 1917, it belonged to the Russian Empire and produced footwear and rubber goods. After the German occupation in 1941, this plant repaired airplane motors and assembled entire planes excepting the wings. The Germans retained the old plant name. With the Soviet occupation, the plant was renamed REZ and began to produce electric motors and appliances. It was subordinate to the Ministry of Electrical Industry and was considered a branch of the Dinamo Plant in Moscow from which it received many orders. The plant's perimeter, which measured about 2,200 meters, was surrounded by a wooden fence and a brick wall about two and one-half meters high, both topped with barbed wire. The plant had no restricted section or underground

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installations. Half of the plant buildings had been constructed or reconstructed after World War II.

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2. Following is the legend for sketch of the plant, on page 24.

1. Steel railroad bridge built on four wooden trestles about 1946 or 1947, measuring about 60 meters long, and located about four meters above the water level, permitting the passage of small tugs. It carried a single set of railroad tracks and had no walk for pedestrians. A plant guard was posted at the plant end of the bridge.

2. Pre-World War II reinforced-concrete, five-story building with cement-faced walls; it had been altered after World War II, measured about 250 x 75 meters, and had no basement because, it was said, of the abundance of underground water. It had a deck roof. The building was several centimeters out of line because of a faulty foundation. The first floor contained the electroplating, stamping, and materials preparation sections; the second floor contained the machine, tool, tempering and welding, insulation, and experimental sections, the central storehouse for plant tools and instruments, and the section for cutting plastic insulating materials; the third floor contained the controls section No. 1 (for trains), the controls section No. 2 (for streetcars), and a machine section; the fourth floor contained the managerial, administrative, and technical offices for the entire plant; the fifth floor contained a section that produced household electric meters. A kind of wooden watchtower containing antiaircraft guns was constructed on the roof and used as an observation post during World War II.

a. First floor (see sketch on page 25 for layout):

(1) Electroplating section. In this section, screws, bolts, and all parts that needed protection were electroplated; control levers, some screws, and some other items were chrome plated. This section had several drums for electroplating small parts; several ventilators and electric furnaces to aid the drying of plated parts. Plated and chrome-plated parts were transported to the plant's various assembly sections. This section employed about 100 laborers on three shifts.

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(2) Stamping section. This section produced many different parts for generators although the main product was housings for condensers and for different equipment needed on trains and streetcars. This section had several electrically operated stamping machines of different capacities, and four mechanical cutting machines for cutting sheet up to eight millimeters thick; this machinery was new and was of Soviet make. The stamped parts were transported via elevator to the assembly departments of controls sections No. 1 and No. 2, both of which were located on the third floor of this building. The stamping section employed about 200 laborers on three shifts.

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(3) Materials preparation section. In this section, burrs were removed from cast parts, and sub-assembly of insulating elements was done. This section had two lathes and three or four drill presses. The machinery was old because it was not used for precision work, and it was of Soviet make. The products were transported via elevator to the assembly departments of control sections No. 1 and 2. This section employed about 100 laborers on two shifts.

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b. Second floor (see sketch on page 26 for layout):

(1) Machine section. This section produced parts and tools (dies, cutting tools, templates, etc.) for the tool section. It had a grinding department for all plant cutting tools. The machine section had ten lathes of different types, three universal milling machines, three planers, two flat grinders, two cylinder grinders, seven universal grinders for different grinding operations, and two machines, each of which was a combination milling machine and drill press. These /last two?/ machines worked over a revolving circular bed that bore coordinates, operated at a temperature of approximately 18 degrees, were located in a department away from the other machinery, were equipped with a fan that avoided the collection of dust on the machines, and were covered after use; they were Soviet-made duplicates of German machines, were known as koordinatnyye and bore the letters ZIP, which might mean Zavod Instrumentalnykh Priborov. All products from this section were sent to the tool section, which was contiguous. The machine section employed about 50 laborers on one shift.

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(2) Tool section. This section produced instruments for special work processes that could not be obtained from outside sources, instruments such as clamps for mass production work done with grinding machines, milling machines, planers, drill presses, etc.; stamping dies were finished in this section, which also repaired all tools used at the plant. This section contained three shaping machines, three large and two small drill presses; one circular saw with hydraulic controls, two copying machines, two electric drilling machines (new in 1952) for drilling very small holes. These machines had no drill, but were equipped with a kind of needle that served as anode while the part being worked on was the cathode; upon contact of the two, the material was eroded and the hole drilled. All this machinery was of Soviet make. The products from this section were transported to the toolrooms corresponding to each plant section. This section employed about 70 laborers on one shift, most of whom were fitters.

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(3) Tempering and welding section. This section tempered different parts and cutting tools; these included cutting tools, springs, screws, etc. In this type of work and also in the preparation of ceramic cutting tools to work tools, this section supplied the entire plant. It had four electric furnaces (three large and one smaller), in which objects were heated for tempering and welding (sic); and three tanks, one containing soybean oil, another diesel fuel, and the third, water. This section employed 15 laborers on three shifts, a technologist, and a chief inspector.

(4) Insulation section. This section insulated train and streetcar controls and some of the generators that were installed in railroad cars. Insulating materials used were insulating paper, cloth insulating tape, and mica. This section contained two electric furnaces, and several fans to dry the insulating elements. Insulated parts were sent to the controls sections Nos. 1 and 2, in this building, and to assembly section No. 1, located at point No. 2 on the sketch on page 24. This section employed about 20 women on two shifts.

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(5) Experimental section. This section studied foreign-produced motors, generators or their electrical components to obtain data of interest to the plant. This section also investigated and corrected malfunctioning of plant products; it also designed new types of motors or generators which were

to be produced at the plant. This section had a universal lathe, two drill presses, one grinding machine, and one planer; this machinery was in good condition, and was all of Soviet make, but, in general, this section placed orders with the machine section on this floor. The experimental section received the work from the plant construction byuro, to which it was subordinate and to which it had to present reports on experiments which were conducted. This section employed about 15 persons on one shift, including one section chief, one assistant engineer, one technologist, three lathe operators, and about nine fitters.

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(6) Central storehouse for plant tools and instruments. Stored were grinding wheels, ceramic cutting tools, precision measuring instruments, drills, and, in general, all tools produced at other specialized plants. This storehouse supplied the different plant section storehouses. This storehouse employed about five persons on one shift.

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(7) Section producing insulating elements from plastic sheets. In this section, sheets of insulating plastics were cut into flat insulating elements of different shapes; templates were used, and the insulating elements were used in controls, generators, motors, and housings containing several electrical apparatuses. The sheets used were of different kinds, of bakelite, fiber, cardboard, and black plastics with which he was not familiar. This section had two bandsaws, two vertical milling machines, two cutting-tool stampers (which stamped several at a time), two circular saws, one planer, and one drill press; this machinery was in good condition, and was of Soviet make. About 20 workers on one shift were employed here. the section supplied all plant assembly sections; the latter absorbed the entire production of the section.

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(8) The second floor had a small laboratory that was subordinate to the construction byuro; it made photocopies of plans and also tested precision measuring instruments. It employed about six specialists on one shift. There was also a raw materials storehouse for the sections located on the second floor.

c. Third floor (see sketch on page 27 for layout):

(1) Controls section No. 1. In this section were assembled and finished the controls for electric locomotives. This section had only two fixed drill presses, two hand drills,

and two manual grinding machines. When finished, the controls were transported via battery-powered carts to the plant products storehouse located on the first floor of point No. 9 (sketch on page 28). The fist controls section employed about 100 laborers on two shifts; the number of persons employed was increased at the end of each month so that the plan could be fulfilled. 50X1-HUM

(2) Controls section No. 2. In this section were assembled and finished the controls for streetcars. This section had the same machinery as controls section No. 1; when finished, the controls were transported via battery-powered carts to the plant products storehouse located on the first floor of point No. 9 (sketch on page 28). The section employed about 60 laborers on two shifts. 50X1-HUM

(3) Machine section. This shop produced mainly small and large screws; most of the production was absorbed by controls section Nos. 1 and 2, although this section supplied all plant assembly sections. The machine section had 50 automatic lathes, ten turret lathes, ten non-automatic lathes, and four milling machines. 50X1-HUM This section employed about 200 laborers on two shifts.

d. Fourth floor:

Management and main offices for all administrative, technical, and political functions. 50X1-HUM

e. Fifth floor:

Section producing electric meters for domestic use. This section began operations in 1955, for which reason source did not know its operation in detail. it received 50X1-HUM stamped parts and screws and bolts from other plant sections, and the meter housings were bakelite and were received 50X1-HUM from the Elektro Armaturny Zavod, in Riga. The meters were assembled on an assembly line, 50X1-HUM

3. One-story reinforced-concrete building, measuring about 50 x 30 meters, with brick walls, that was built in 1947; a narrow area along the entire southwest side had two stories although it was the same height as the rest of the building; this second story contained offices and some small storehouses. The roof was similar to a saddleback roof, but the sides of each "tooth" were of glass. Until 1950, the main shop contained an assembly shop for electric motors and generators, the instrument shop, and a storehouse for screws, bolts, and common parts used by various plant sections. After 1950, this was converted to a carpentry shop which built or repaired doors and windows for plant buildings as well as repairs to the plant fence. This shop also carried out repairs at rest homes for plant personnel and their children; however, its main work consisted of making models for the foundry and packing boxes for the plant products. It had the following machinery: two drill presses, two planers, one bandsaw, two circular saws, and a milling machine. The machinery was Soviet-made and was in good operating condition. The foundry models were transported to the foundry, and the packing boxes to the plant products storehouse, both via battery-powered carts. The carpentry shop employed about 50 carpenters on one shift.

4. Old building in good condition, with reinforced-concrete columns and beams, and red-brick walls; it was a one-story building about ten meters high, with a daylight basement. The building measured about 30 meters square and had a brick chimney about 40 meters high that was located at the southeast corner of the building. A round water tank made of brick was built around the chimney at a height of about 25 meters above ground; this tank had a diameter of about ten meters and measured about four meters in height. The daylight basement contained the eight coal-burning boilers that heated the entire plant; cars carted away the coal ash from the boilers.

5. Open-air coal storage for the heating plant.

6. Water tank, built in 1951 of reinforced concrete; it had an exterior diameter of about ten meters. About 2.5 meters showed above ground level,

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7. Cylindrical structure identical with the above mentioned water tank, also constructed in 1951 of reinforced concrete and measuring about ten meters in outside diameter. This structure showed about three meters above ground level, and about three meters below ground level, and housed the pumping station to pump sewage into the river.

8. Transformer for electricity received from outside the plant; it was installed in a small one-story structure that measured about three meters square.

9. Steel and concrete building with red-brick walls and a saddleback roof, both sides of each "tooth" being glass; this was an old building reconstructed in 1951 by German prisoners, and measured about 200 x 100 meters. It had only one story except for a 20-meter wide section along each of the two longer walls, which had two stories although these sections were the same height as the rest of the building, that is, about ten meters high. The ground floor contained the compressor station, winding section for electric motors and generators, section producing rotors for electric motors and generators, first assembly section for motors, machinery repair section, stamping section, second assembly section for motors, the plant products storehouse, and the raw materials storehouse. The second floor contained the third assembly section for washing machines and the offices of all the sections contained in this building.

a. Ground floor (see sketch on page 28 for layout):

(1) The compressor station contained two compressors, which supplied compressed air to the sections in this building that required it to remove dust and foreign matter from motors or appliances, and for spray painting of motors, generators, washing machines, etc. The compressor station employed about six persons on three shifts.

(2) The windings section prepared windings for generators and electric train and streetcar motors. Its production was absorbed by the rotors section, and the first assembly section for motors. This section had 20 bobbin lathes of different types, two lathes to cut ribbon tape from rolls of insulating paper, two benches with supports for hand-winding irregular shapes, three manually operated guillotine shears for cutting the paper, and three electric furnaces to dry the black paint named bitum that was composed of tar and alcohol. The windings section employed about 300 persons on two shifts.

(3) The section producing rotors for electric motors and generators which were installed beneath railroad cars on steam-driven trains to provide electricity for illumination, and rotors for electric locomotives and streetcars. This section had the following machinery: six large universal lathes, three cylinder grinders, four small and two large milling machines, six supports for the positioning of insulating material, four hydraulic presses, two large electric furnaces for

drying the insulating paint named bitum, the instrumentation necessary for the inspection of the rotors, and two three-metric-ton capacity cranes. All this machinery was Soviet-made and was in good condition. The commutators were transported via battery-powered carts to the first assembly section for motors, which was located in this same building. This section employed about 150 laborers on two shifts.

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(4) The first assembly section for motors (and generators) carried out complete assembly of motors for streetcars, generators for illumination of railroad cars on steam trains, and two types of motors for electric trains, one of which types had two commutators, one on either end of the shaft, as if it were a double motor; manufacture of this type was begun in 1957 at the rate of about five per month. This section had a machine shop that contained five very large radial drill presses of Bulgarian make that were received at this shop in 1950, eight medium-size vertical drill presses of Soviet make, two large universal lathes, eight medium-size universal lathes, two vertical boring milling /Spanish-carruseles/, three large horizontal boring machines, two medium-size planers, four double-column planers with twin heads and hydraulic controls (each of these planers had from six to eight electric motors for its different movements), two electric welding sets, four milling machines, one of which was large, four small drill presses, six test benches belonging to the inspection department (two for train motors, two for streetcar motors, and two for generators for steam train cars), and four three-ton cranes. In general, this machinery was German-made; in 1950, it began to be replaced with Soviet-made machinery, and this replacement was now complete. The assembled motors and generators were transported via battery-powered carts to the plant products storehouse located in this building. This section worked three shifts, and at the end of the month, employed twice the number of workers, who were brought from other sections.

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(5) The machinery repair section installed new machinery and repaired all plant machinery. This section had six universal lathes, three planers, two milling machines, three medium-size drill presses, two horizontal boring mills, two vertical broing mills, a kind of vertical planer (special for key-slots and squaring housings made on the milling machines), one electric

welding set, one autogenous welding set, one hydraulic press, and two cranes - one hand-operated, and one three ton bridge crane. In 1952, about half this machinery was German-made and the remainder was Soviet-made; all was in good condition. This section employed about 100 laborers on two shifts. [redacted] this section repaired all plant machinery. 50X1-HUM

(6) The stamping section supplied all plant assembly sections; it had the following machinery: 23 Soviet-made electric stamping machines, two hydraulic stamping machines that [redacted] were German-made, one small lathe for the repair of this machinery, and one three-ton bridge crane. This machinery was in good condition in 1952. The stamping section employed about 150 laborers on three shifts. The stamped parts were transported via battery-powered carts directly to the different assembly sections of the plant. [redacted] 50X1-HUM 50X1-HUM

(7) The second assembly section for motors /and generators/ produced: 1) generators used both for mobile radio units and mobile movie projectors, 2) generators for an unknown use, 3) two types of small motors: one for 127 volts, and the other for 220; the 220-volt motor was used on washing machines, [redacted] This section had a machine shop that contained 12 universal lathes, four medium-size drill presses, three planers, three milling machines (two vertical and one horizontal), one electric welding set, one autogenous welding set, six bobbin lathes, four assembly tables, three test benches belonging to the inspection department (none of the inspectors were military in spite of the fact that the generators for mobile radio units were made for the Army), two hydraulic presses, two electric furnaces to dry the insulating paint on the windings, a painting department, and one two-ton bridge crane; all this machinery was Soviet-made. The generators used for both mobile radio units and mobile movie projectors were driven by a 3-HP, one-cylinder, four-stroke gasoline engine that developed about 1,200 RPM and consumed about 200 grams of gasoline per hour; it had a magneto. Each generating unit was mounted on a trailer with four metal wheels that had a pole so it could be towed short distances; these units were painted khaki-color and stored in the plant products storehouse; the generators produced for an unknown use were also stored in this storehouse, as were the 127-volt motors. The 220-volt motors were transported to the third assembly section for washing machines, which was located on the second floor of this building. The second assembly section for motors /and generators/ employed about 250 laborers on two shifts; [redacted] 50X1-HUM 50X1-HUM

(8) The plant products storehouse stored all plant products, packing them and invoicing them for their respective destinations. Plant products destined for plants in the city were transported in trucks; products for points outside the city were transported to the railroad freight station. This storehouse measured about 150 meters long by about 20 meters wide, and the only machinery it had was one three-ton bridge crane. It employed about ten persons on one shift. the number of plant products stored was small because they were constantly being shipped out. 50X1-HUM

(9) The raw materials storehouse stored the most valuable raw materials and those that might be damaged by open-air storage: rolls of copper wire of different diameters insulators and insulating material, tin ingots, different kinds of steel bars, including stainless steel, copper in bars and sheets, aluminum sheets, sulphuric acid in powdered form for welding and other acids, caustic soda, alcohol, small bars of silver for special soldering, and a few other materials. This storehouse had two disc saws to cut these materials when necessary. The raw materials storehouse measured about 60 x 50 meters. The irons and steels, both in bars and scrap that were stored in the open air and located at point No. 12, (sketch on page 24), also belonged to this storehouse. the volume of the stored raw materials was about a month's supply. This storehouse employed about ten persons on one shift. 50X1-HUM

b. Second floor: ~~(see sketch on page).~~

(1) The third assembly section for washing machines assembled and finished all the washing machines produced at the plant; this section had a machine shop that contained six large lathes, six small lathes (for screws and bolts and the mechanical part of the washing machine), two planers, two milling machines, four drill presses, two hand grinders, two autogenous welding sets, one electric spot welder, two threading machines for female threads, two manual drilling machines, a bending roller, and a small painting shop. All this machinery was Soviet-made. The finished washing machines were transported by elevator to the plant products storehouse, located on the first floor of this building. in 1952, 120 washing machines were produced monthly, and production had been greatly increased since them. This section employed about 150 laborers on two shifts. 50X1-HUM

(2) The offices for all the sections contained in this building, the offices of these section chiefs and living quarters for the mechanics in charge of all the installations, and the upkeep of the motors and electric power lines in this building.

10. Plant foundry, a new building inaugurated in 1955; it had reinforced-concrete columns supporting the steel framework of the modified monitor roof. The roof had three skylights that occupied its entire length; these skylights consisted of retractable windows that were always open. The building had cement-colored brick walls and measured about 150 x 100 meters by about ten meters high. It had only one story except for a section along the entire northwest side which had two although it was the same height as the rest of the building. A metal chimney that projected about ten meters above the roof was located on the northeast wall of the building. On this same wall /and/ located next /to the metal chimney/ were about six exhaust vents through which exhaust fans expelled the air. In spite of these fans and the fact that the building was new, working conditions within the building were quite unhealthy because of the amount of gases within the building. The two stories along the northwest side contained the storehouse for instruments and the offices of the foundry chief. The foundry cast iron and non-ferrous metals used in the manufacture of parts for the motors and generators produced at the plant. The entire production of the foundry was absorbed by the plant. [redacted] the foundry [redacted] contained four electric furnaces for smelting steels, two small electric furnaces for non-ferrous metals (aluminum, copper, bronze and perhaps others), seven three-ton bridge cranes, and several manual grinding machines. Transport within the foundry was effected by small cars pushed by laborers. The foundry had a small machine shop for foundry repairs; it contained four furnaces, one planer, one drill press, and one horizontal milling machine. The foundry employed about 250 persons on three shifts; the third shift had the least personnel. [redacted] the foundry supplied the entire plant. Since the inauguration of the foundry, plant production has increased because there were no longer delays or shortages in the filling of foundry orders.

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11. Rolled-earth road used until 1951 by vehicles entering the plant; it was not used after 1951 because of road cave-ins near the canal.

12. Open-air storage of iron and steels used as raw materials; this area belonged to the raw materials storehouse located on the first floor of point No. 9.

13. Small brick building added to point No. 9; it had one story, measured about 10 x 8 meters, and contained an electrical installation consisting of four electric motors that drove four electric generators. This installation was a station in which alternating current was converted to direct current, which was used in the electric welding which was in use throughout point No. 9. 50X1-HUM

50X1-HUM

14. Basketball and volleyball courts.

15. Telephone exchange and plant firehouse, both contained in an old two-story brick building; the firehouse was on the ground floor, the telephone exchange on the second. This building measured about 15 x 8 meters.

16. Small, one-story wooden shed measuring about 10 x 5 meters, in which discarded plant machinery was kept until it was carted away by the agricultural machinery repair stations of the kolkhozy.

17. One-story wooden building measuring about 30 x 10 meters which contained a shop for prefabricated concrete elements including beams, sewer pipes, and blocks for sidewalk curbs within the plant. This shop was not subordinate to the plant, but to a construction trust in the city of Riga, and was located within the plant because of a contract between the plant and this trust.

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17 a. Atomic shelter (see paragraph 15 below).

18. New, one-story building with monitor roof; it measured about 50 x 30 meters and contained the forge shop, not further described. The exterior walls were of cement-colored brick

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19. Iron and concrete bridge with three arches; it measured about 50 meters long by about 12 meters wide. The Krasnaya Dvina Canal ran beneath, and small tugboats could pass beneath its central arch. Ganiva Dambis Street ran across the bridge, together with its double streetcar tracks, two-vehicle lanes, and two sidewalks.

20. Small log dock, used only for unloading construction materials (asphalt, cement, sand, stone) used by the prefabricated concrete elements shop (point No. 17); only barges unloaded at this dock.

21. Two semi-underground buildings with brick walls and concrete foundations to combat water seepage from the nearby river. Of these two buildings, the more northerly projected one meter above the ground, and its roof was dirt-covered; it measured about 10 x 5 meters, and was used for storage of such foods as rice, sugar, oil, vegetables, flour, canned food, etc. The second building projected less than two meters above the ground, measured about 20 x 7 meters, and was used for the storage of potatoes chiefly, although carrots, red beets, and onions were also stored there. Although outside the plant fence, these storehouses belonged to the plant and were guarded by a plant guard; they supplied the plant dining room, point No. 22.

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22. Plant dining room and kitchens, installed in a new building inaugurated in 1956 whose walls were of cement-faced brick. It had a daylight basement that contained the kitchens, sinks, and toilet facilities; the ground floor contained the dining room. The building measured about 50 x 20 meters; meals were served in two shifts.

22a. Concrete all-weather highway about ten meters wide.

23. The only plant vehicular entrance.

24. Old, two-story brick building that measured about 20 x 10 meters. The ground floor contained the plant personnel entrances and space for the parking of plant workers' motorcycles and bicycles. The second story contained the plant guard post, and living quarters for a few plant workers.

25. Department subordinate to the plant personnel section which processed new workers who were seeking employment at the plant. Propuski were also issued for plant personnel, and temporary passes were issued to non-plant personnel who had to visit the plant. This department was located in a small, new, one-story cement-faced brick building, and employed about ten persons on two shifts.

26. Collective housing unit for plant bachelors and a few married men; it was a three-story brick building in good condition although old, had no basement, measured about 40 x 15 meters.

27. Collective housing unit for plant spinsters, widows, and a few married women; it was an old, two-story brick building in good condition, had no basement, and measured about 40 x 12 meters.

28. Circular building built of reinforced concrete in 1951. It had an exterior diameter of about ten meters and projected about three meters above ground and about three meters below ground. This building contained a pumping station for sewage from the neighborhood of plant dwellings located within the area marked with a dotted line (point No. 31) on the sketch of the plant (on page 24). The six buildings surrounding this pumping station were one-story log buildings, each of which was inhabited by four families of plant workers.

29. Plant garage, built with reinforced-concrete columns and cinder-block walls in 1954. It had a steel roof framework, and a monitor roof; it measured about 40 x 25 meters; in 1958 or 1959 plant vehicles were transferred to the transport motor pools that were being organized in Riga. In 1952, the plant had six light three-ton trucks that were kept in this garage. 50X1-HUM

30. Row of old, one-story, plant dwellings, some brick and some log.

31. Broken line; the dwellings within this broken line belonged to the plant.

32. Ganivu Dambis Street.

PRODUCTS

3. In 1952, the plant's production comprised the following:

1) Electric motors for electric locomotives; in 1952, these motors had only one commutator, but in 1959, these motors at that time had two commutators. The motors produced in 1952 were called DK-103 four of these motors were installed in each locomotive. In 1952, all motors with one commutator were shipped to the Vagonno Stroitelnyy Zavod in Riga. 50X1-HUM

2) Electric motors DTI-63 for streetcars most of which were absorbed by the Vagonno Stroitelnyy Zavod in Riga. In 1951, two were exported to China, and some motors were shipped to different cities. 50X1-HUM

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3) Generators of an unknown capacity for illumination of steam-driven passenger trains; these generators were named RD-2 (They were shipped to different railroad car plants, one of which was in Moscow.

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4) Condensers and electrical components for electric trains and streetcars; these were shipped to the Vagonno Stroitelnyy Zavod in Riga.

5) Generators driven by a 3-HP, one-cylinder, four-stroke gasoline engine operating at 1,200 RPM. /See paragraph 7a(7) above/. After testing, the best generating units were towed away by military trucks not further described; these generators were painted khaki-color, and they were used for mobile radio stations and for the illumination of camps. Those generating units which did not pass military requirements during testing were used by unidentified organizations for mobile moving picture projectors, and for providing electric power for towns or villages that had none.

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6) Generators similar to the above-described

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7) Electric washing machines.

8) Electric meters for domestic use, whose production was begun in 1955.

9) Electric motors like those used on the washing machines, but operating at 127 volts.

Production

4. This plant's monthly production in 1952, which was the maximum that could be reached with the existent machinery and personnel, was 24 DK-103 electric motors for locomotives, 70 DTI-63 electric motors for streetcars, 150 RD-2 generators for illumination of steam trains all assembled by the first assembly section /point 9 (4) above/ and an unknown number of electrical elements and condensers, although their number should be equal to that of the motors and generators, about 30 or 40 gasoline engine-driven generators, about 30 or 40 generators of a size similar to the aforementioned, about 120 electric washing machines, and about 100 motors like those used on washing machines but operating at a voltage of 127 volts. These figures represented the fulfillment of the work plan without exceeding it.

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production figures are not falsified. If the work plan was not fulfilled, the money for the payment of salaries was withheld by the banks, resulting in a five- to ten-day delay. In order to receive the funds, the director had to go to the ministry and explain why the monthly production plan had not been fulfilled. production had been increased severalfold because of more highly specialized personnel and an increase in their number, new machinery, the introduction of new norms, improved work processes, and the inauguration of the foundry in 1955. Also in 1955, the serial production of electric meters was begun.

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the plant could be converted to war production in a very few days. the 1957 production had doubled or tripled over the 1952 production.

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RAW MATERIALS

5. the following raw materials were used at the plant:

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Rolls of copper wire in different diameters;
porcelain or ceramic insulators;
sheets of insulating material that had a surface of 1.5 meters (sic), and from one to 20 millimeters thick; this material was made from textile fibers and plastics;
sheets of plastic insulating material that measured 1.5 x 1 meters and from 1 to 20 mm thick;
tubes of insulated material made from textile fibers and plastics, used in the production of insulating washers with exterior diameters of from 20 to 100 mm and interior diameters of from 5 to 40 mm. These tubes measured from 300 to 500 mm in length;
bakelite tubes with the same dimensions as described above, also used in the production of insulating washers;
loose insulating material;
refractory earth insulating material, either in sheet or paste form. This was an excellent insulator for heat and electricity and was also supplied in powdered form;
cloth insulator named sites, impregnated with soy bean oil and then dried;
sheets of very hard but durable insulating material named fiber, in thicknesses of from .5 to 3 mm;
insulating paper impregnated with soy bean oil;
insulating tape;
black insulating paint named bitum;
tin ingots for soldering;
lead in ingots and sheets 5 mm thick;
steel bars of various kinds;
sheets of the same kinds of steel with thicknesses of from 2 to 50mm;

steel strips from .25 to 2 mm thick, used for springs;
stainless steel in sheets measuring 1.5 x 1 mm and from .5 to 2 mm thick;
stainless steel in bars 25 mm thick. there were also smaller bars 50X1-HUM
the stainless steel in plant products was used in the manufacture of screws for washing machines;
sheet copper measuring 1.5 x 1 meter and from 1 to 5 mm thick;
copper ingots;
copper bars, with diameters of from 4 to 30 mm;
copper strips 15 to 50 mm wide and from .5 to 3 mm thick;
bronze strips identical to the copper strips described above;
brass bars with diameters of from 5 to 40 mm;
brass strips from 15 to 50 mm wide and .05 to 2 mm thick;
aluminum sheets measuring 1.5 x 1 meter and from 2 to 8 mm thick;
aluminum ingots for the foundry;
aluminum bars with diameters of from 5 to 25 mm;
aluminum cable with diameters of from 2 to 5 mm;
sulphuric acid in powdered form for welding, and other kinds of acids, used in electroplating;
zinc sheets from .5 to 1 mm thick;
galvanized iron sheets from .5 to 2 mm thick;
ingots of babit, an alloy of zinc, lead, and other materials, used as an antifriction metal on electric motors and drive shafts of electric locomotives;
caustic soda for galvanization;
60-percent alcohol for cleaning commutators;
shellac which was mixed with alcohol for certain insulators;
bakelite housings for electric meters made at the Elektro Armaturny Zavod in Riga;
silver bars for special soldering, 50X1-HUM
gasoline engines coupled in generators, as described above, manufactured at a plant in Gorkiy not further described;
paints and enamels;
iron ingots and scrap iron for the foundry;
coal, peat, and charcoal. The first was for the plant heating system and the last two for the forge shop;
voltmeters, ammeters, and, in general, equipment measuring electricity, for installation in trains and streetcars;
lubricating oils;
soy bean oil for waterproofing and insulating fabrics;
gasoline and diesel fuel for cleaning motors and generators. The gasoline was also used in electroplating;
pine resin named kanifol, used in tin soldering;
felt for gaskets;
insulating rubber already cut to required shapes;
ball and conical bearing for motors and generators, received from a ball bearing plant in Moscow.

The listed raw materials were shipped to the plant by train. the 50X1-HUM

plant was not dependent on foreign imports.

Utilities

6. The water was supplied by the city water system. The plant water tanks are mentioned in points No. 4 and No. 6. The plant had no powerhouse. Six or eight insulated electric cables, each with an exterior diameter of about 45 mm, ran beneath the railroad bridge (Point 1 on sketch on page 24). the plant transformer (Point 8 on sketch on page 24 From 1952 to 1959, interruptions in the supply of electricity were not common, but after 1959 there were interruptions at this plant as well as all city industries. This was attributed to the fact that the preceding summer had been exceedingly dry and that the hydroelectric station Rizhkiy Kegum decreased electric production because of lack of water. the thermoelectric station constructed in 1953 was said to be very powerful. the interruptions might rather have been caused by the fact that important new industries, perhaps secret, consumed a large part of the electricity produced, thereby reducing the amount available for other industries. Because of the difficulties in the electric power supply, all city industries, including this plant, were assigned one day that employees were to have free in place of all having Sunday. It was said that this problem would be solved in spring 1960 when the thaws began. Plant machinery operated at 350 volts. Plant lighting and electric-powered hand tools operated at 220 volts. The lighting system for lathes, milling machines, and fitters' benches was at 36 volts.

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Packing

7. Plant products were shipped in roughly finished wooden boxes or crates. seen no exterior markings

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Transport

8. This plant had a railroad spur which connected with the city freight station. It was a single track of standard Soviet gauge and was not electrified. It had one siding and no freight platforms. These installations were not being enlarged. The plant had no railroad materiel of its own. One or two cars entered the plant daily. All or nearly all raw materials entered the plant via this spur line.

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The plant had a main highway which ran along its entire length. It had two branches, one running between Points Nos. 2 and 10 and the other between Points Nos. 4 and 9 on the sketch on page 24. This all-weather highway was built in 1950, was made completely of concrete, and was not surfaced with any other material, was about 10 meters wide and was considered adequate. In 1952 this plant had six three-ton trucks. these trucks transported plant products to the city freight station. After 1958 or 1959, this truck service was to be eliminated and motor pools under construction in Riga were to take charge of plant transport. Vehicles were to be requested one day in advance. River transport was not used [sic: probably only for outgoing products].

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Schedule and Working Conditions

9. Until 1 January 1960, this plant worked eight hours daily Monday through Friday and six hours on Saturday. After this date, the plant worked seven hours daily Monday through Rriday and six hours on Saturday. The main sections of REZ normally worked three shifts although several sections worked only two.

10. Vacations were not given during any fixed period but throughout the year by turns except for Party personnel who were given preference. It was a labor union rule that workers could not refuse to take their vacations when indicated, but in spite of this, many workers were able to change the dates by filing a petition with the plant director who could authorize such changes. Workers who had worked less than three years at the plant received 12 working days; workers with more than three years received 15; workers engaged in heavy labor or that detrimental to their health received 18 days. Engineers, section chiefs, and administrative employees received one month.

11. Until 1 January 1960, salaries were proportionate to each worker's production in accordance with the worth of the products and work norms. After this date, fixed salaries were introduced and by 1 April 1960, all personnel in all industries in the USSR were to be included in this new system. Categories were reduced two numbers, the eighth becoming the sixth, the seventh becoming the fifth etc. Workers in the sixth category such as fitters, lathe operators, and other specialists received 1,000 rubles monthly; the fifth category, 900 rubles; the fourth, 800 rubles; the third, 700; the second, 600; and the first, 500. These wages were paid provided the work norms were fulfilled 100 percent. For non-fulfillment of norms, deductions were made. Bonuses were given for exceeding norms. This new system was intended to eliminate the great differences in wages received by

workers (the best workers received less money this way), and it was said that this system would also serve to increase the salaries of doctors and health officers, who earned very little.

12. Health conditions were fair. Each year all personnel appeared before a medical commission which did not pay close attention to the complaints made by personnel but rather the examination seemed aimed at avoiding contagious diseases. Approximately every three or four years, workers were inoculated for typhus and some other diseases (in early 1960, the entire population of Moscow was vaccinated in 24 hours against a serious illness named chernaya ospa, which came from India). Each plant section had a medicine chest which was originally equipped with iodine, cotton, alcohol, and bandages, but which was always empty. The plant had a clinic with a health officer in attendance. Specialists held office hours one or two days a week, when a mobile X-ray unit arrived at the plant. Some workshops were well ventilated and some, like the foundry, were not.

Plant Security

13. About 100 plant guards on three shifts daily guarded the two entrance gates, the entire length of the fence from within, and the various shops. They carried pistols, were of both sexes, were more than 40 years old, and at night were accompanied by dogs. Nevertheless, it would have been possible to jump over the fence without being seen. Plant workers had a propuski which had to be shown to enter or leave, but once in they had free access to any part of the plant. Visitors to the plant applied at the personnel section for a temporary pass good for one entry. The pass was checked at the section visited and had to be surrendered at the exit.

14. The plant had about 50 firemen and women. Ten or 12 workers from each section, who were charged with seeing that fire-fighting equipment was in good condition, were distributed among the shifts so that there would always be three or more on each shift. These men received instruction after the normal work day and received 50 rubles monthly as compensation. In 1952, the plant had no fire trucks, pumps, or other equipment. The principal job of the firemen and women was the inspection of hoses, foam extinguishers, sand etc. with which each section was equipped. They also checked to see that the fire regulations were complied with.

15. The atomic shelter identified as Point No. 17 was being built of concrete including walls, ceiling, and floor. It measured about 25 meters long by 1.5 meters wide and was made in a zig-zag shape. The ceiling was a few meters high, and only about one-half meter of the shelter was underground. The rest projected above the ground and was earth covered, forming a kind of mound. 50X1-HUM

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The shelter gave the impression of being abandoned because no doors had been installed and except during the summer months, it was flooded with water.

16. As of 1952, this plant had no first-aid stations, no air drills, and no civil defense lectures.

Organization and Personnel

17. See attached plant organizational plan (sketch on page 29) and attached organizational plan for the first assembly section for motor and generators (sketch on page 30). In 1952, the plant employed a total of about 3,500 persons. 50X1-HUM by 1960 the plant employed about 5,000 persons. Of these figures, about 75 percent were specialized workers 50X1-HUM and the remaining 25 percent was composed mainly of administrative personnel, engineers, foremen, brigade chiefs, and common laborers.

18. Until 1952, the plant director was Leonid Zinovich Bunin, Soviet nationality, former Party member who became the second chief for the National Economy (Zaveduyushchii Narodnogo Khozyaystvo [sic]) of the Latvian SSR. He was replaced as director by Sodel who was replaced in 1957 by an unknown person. 50X1-HUM

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19. POWs and ordinary prisoners worked on the repair or construction of some plant buildings. Complaints about the lack of living quarters and the arbitrary way in which they were distributed, and low salaries were made daily. Theoretically, only those persons producing greater quantity or quality received special privileges. Actually, Party members and followers received preference in the granting of living quarters and more highly paid jobs. Absenteeism was not common, and was caused mostly by drunkenness. The first and second offenses received warnings and, upon the third offense, the offender was judged by a workers' board which could transfer

the offender to a lower paying job, assign him to heavier labor, or could fire him. Offenses were noted in the workers' work card. To avoid these sanctions, friendly doctors were prevailed upon for a price to issue a medical certificate so that the worker would appear to have been ill, justifying the absenteeism.

Automation

20. there was no automation in 1952 and it did not exist as of 1960.

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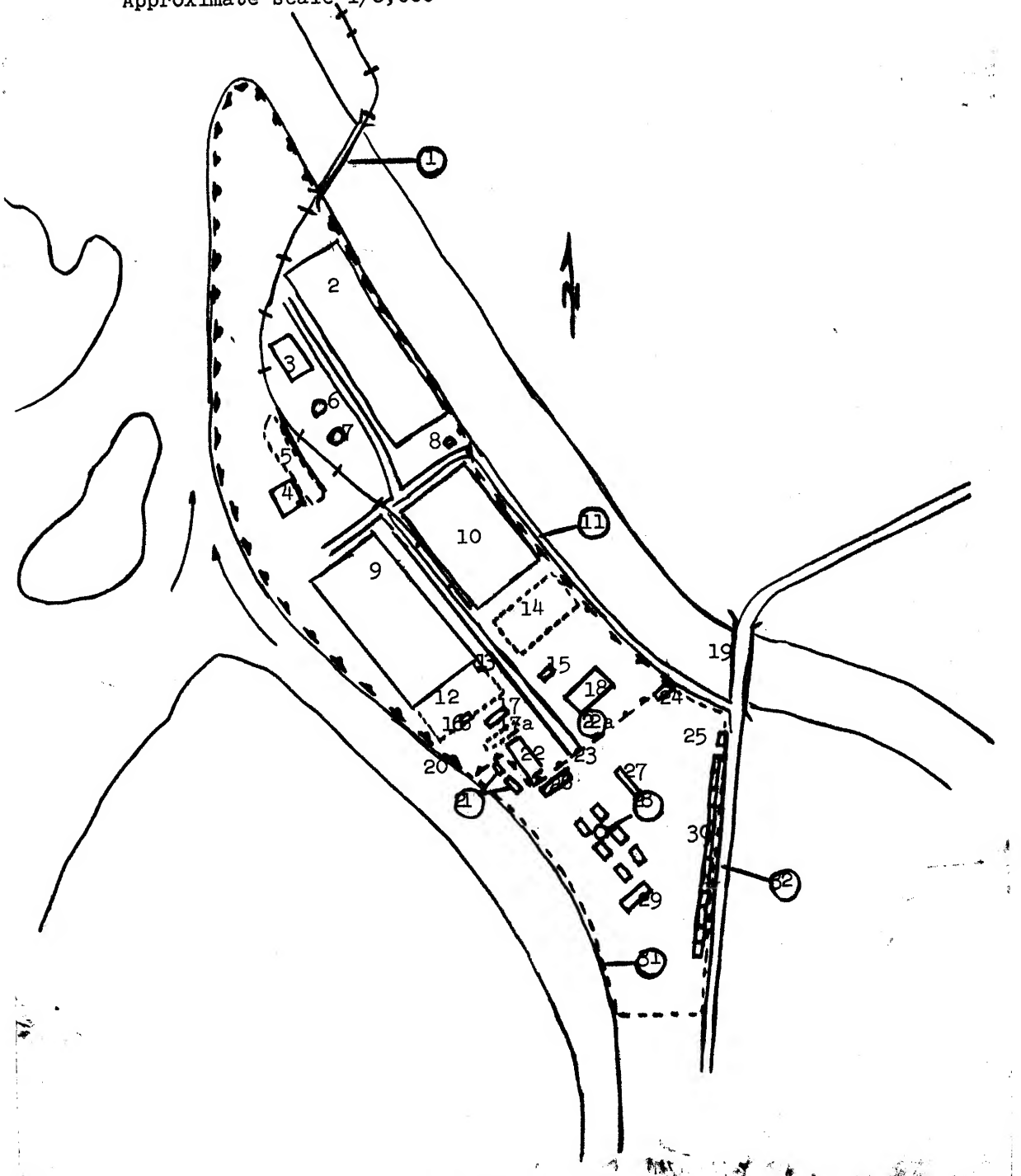
Sketch of the REZ Plant in Riga

Approximate scale 1/6,000



Sketch of First Floor of Building Described Under Point No. 2 of Preceding Sketch

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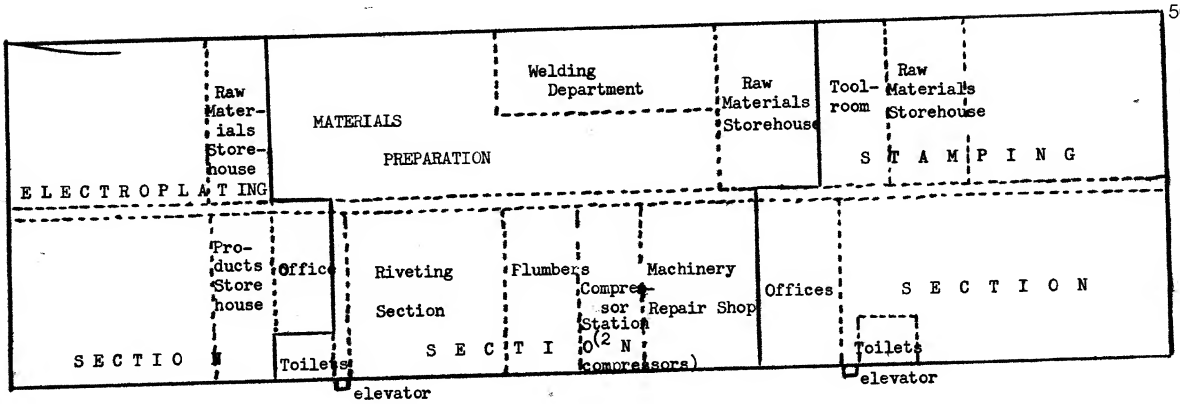

Approximate scale 1/1,000

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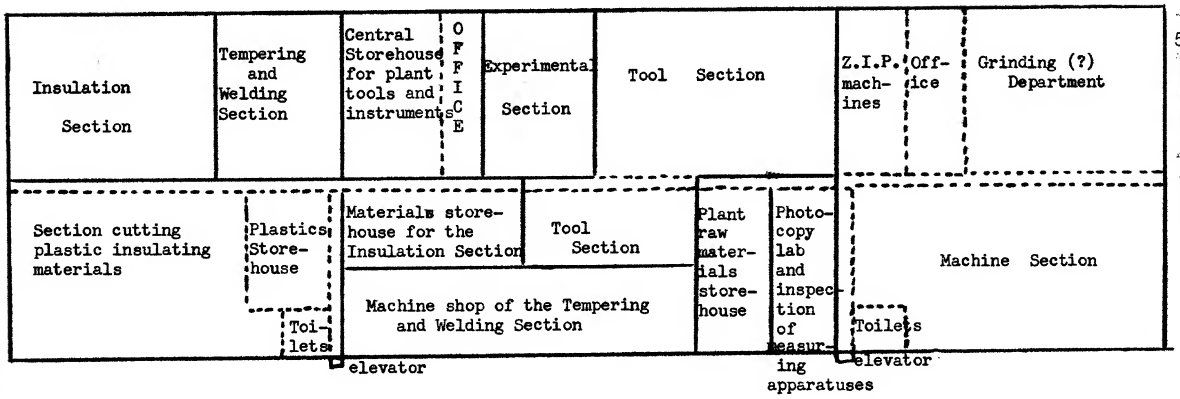
Sketch of Second Floor of Building Described Under Point No. 2.



Approximate scale 1/1,000

Sketch of Third Floor of Building Described Under Point No. 2.

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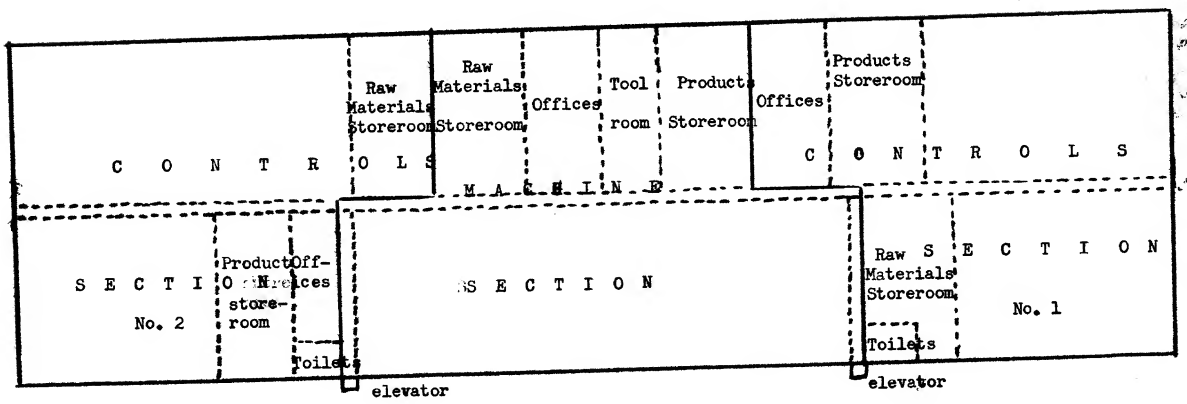
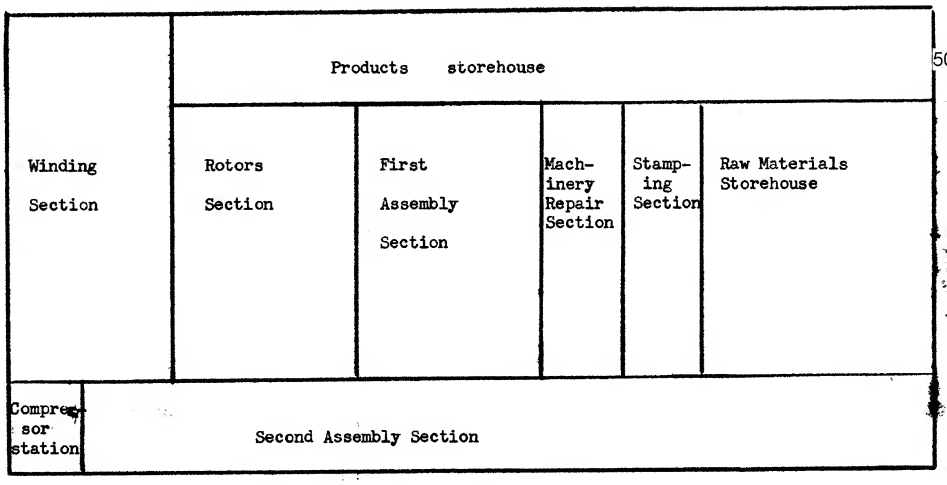
C-O-N-F-I-D-E-N-T-I-A-L



Approximate scale 1/1,000

Sketch of First Floor of Building Described Under Point No. 9



Approximate scale 1/1,000

Table of Organization of REZ Plant in Riga

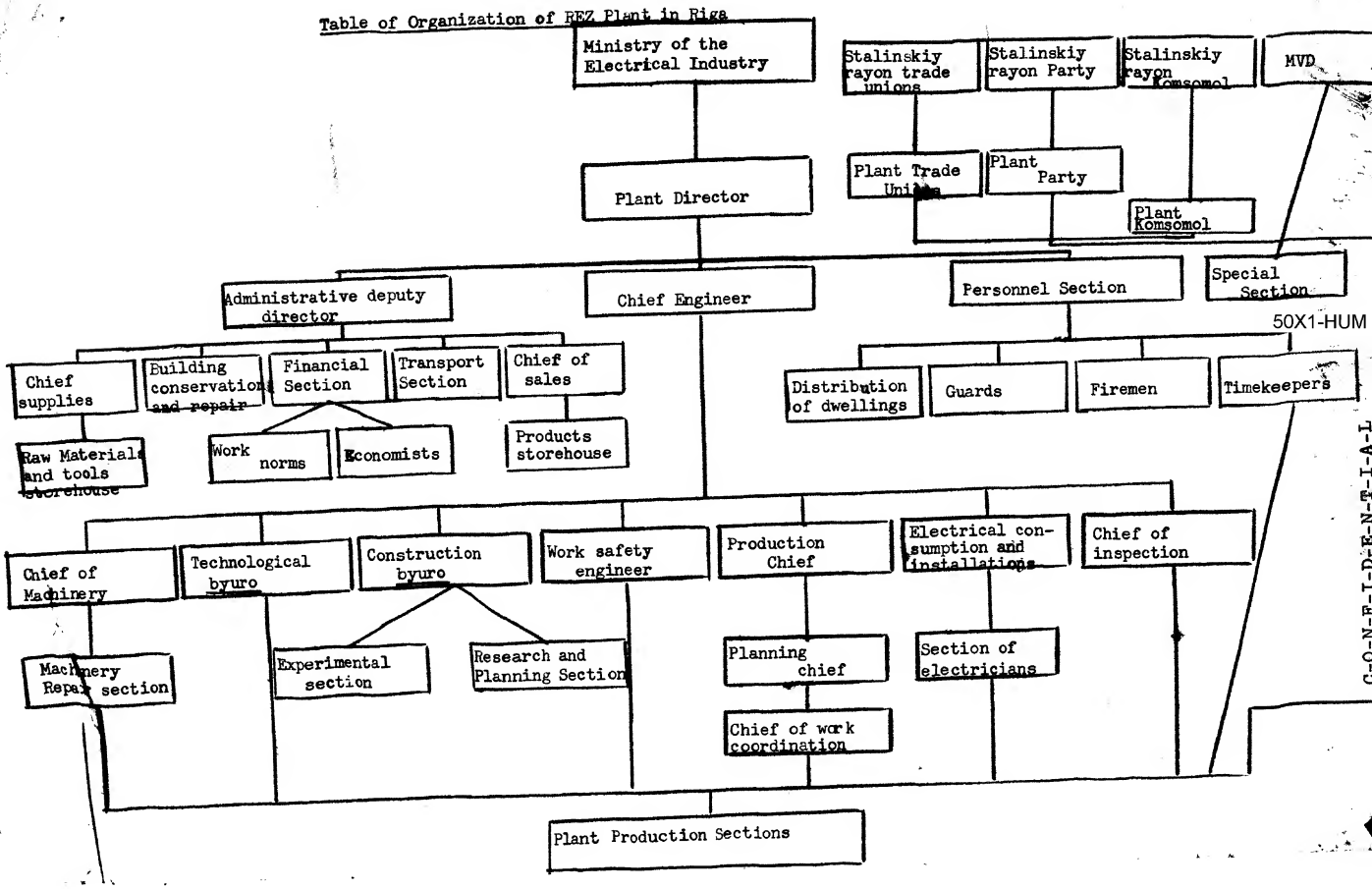


Table of Organization of First Assembly Section for Electric Motors at REZ Plant in Riga